

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
SEMICONDUCTOR ENERGY LABORATORY
CO., LTD.

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2430036 Japan

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing (day/month/year)	10. 5. 2005
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Applicant's or agent's file reference
PCT7697-7698

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/001286

International filing date (day/month/year)
24. 01. 2005

Priority date (day/month/year)
26. 01. 2004

International Patent Classification (IPC) or both national classification and IPC

Int.Cl.⁷ G02F1/1368, 1/1343, G09F9/00, H01L21/28, 21/3205, 21/336, 29/417, 29/423, 29/49, 29/786, H05B33/14

Applicant
SEMICONDUCTOR ENERGY LABORATORY CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion	18.04.2005
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Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

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**WRI IN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

Inte ional application No.

PCT/JP2005/001286

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. IV Lack of unity of invention

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:

- ☐ paid additional fees
☐ paid additional fees under protest
☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

- ☐ complied with
☒ not complied with for the following reasons:

The special technical features of claims [1-18] relates to [forming a first conductive pattern by discharging a conductive material containing a photosensitive material by droplet discharging; selectively exposing the first conductive film pattern to laser light; forming second conductive film pattern by developing the exposed first conductive pattern], while the special technical features of claims [19-25] relates to [a channel length of the channel formation region and a space between the source electrode and the drain electrode have the widths that are the same as that of the gate electrode].

There is no technical relationship among those inventions involving one or more of the same or corresponding technical features.

Therefore, these groups of inventions are not so linked as to form a single general inventive concept.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☐ all parts.
☒ the parts relating to claims Nos. 1-18

WRITING IN OPINION OF THE
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

2. Citations and explanations

D1:JP 2000-258921 A (CANON KABUSHIKI KAISHA) 2000.09.22

D2:US 2002/0012868 A1(TSUYOSHI FURUSE) 2002.01.31

D3:JP 6-61257 A(DAI NIPPON PRINTING CO., LTD.) 1994.03.04

[Claims 1-4]

The subject matter of claims 1-4 does not appear to involve an inventive step with respect to D1 and D2.

D1 and D2 discloses forming a first conductive film pattern containing a photosensitive material, selectively exposing the first conductive pattern, and forming a second conductive film pattern by developing the exposed conductive film pattern.

And D2 discloses forming the first conductive pattern by droplet discharging (see paragraph [0036]).

And Exposing photosensitive material to laser light, and active matrix display device including TFT, are well known.

[Claims 5-12]

The subject matter of claims 5-12 does not appear to involve an inventive step with respect to D1 and D2.

The person skilled in the art would easily conceive the idea of applying the feature disclosed in D1 and D2 to forming a gate electrode, a source electrode and a drain electrode.

[Claims 13-18]

The subject matter of claims 13-18 does not appear to involve an inventive step with respect to D1-D3.

D3 discloses rear exposure method to pattern a resist mask for forming a source electrode and a drain electrode.

Therefore, the skilled person in the art would easily conceive the idea of applying the feature in D1 and D2 to the invention in D3.